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Old Homes and Serene Churches Are Centers of Life and Faith in Rural Sweden

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But the middle way benefits 7,000,000 Swedes who enjoy one of Europe's highest standards of living. The big iron-ore and forest-products industries have had a chance to develop in this country 200 miles longer than California, but only 250 miles across at its widest point. From deposits like that of Mt. Kirunavaara in the bleak north, high quality ore swells the exports from Stockholm and the shipbuilding center of Göteborg in the Maine-like climate of the south. Interior forests, carefully thinned and reseeded, fill the rushing streams with timber which floats downstream to sawmill towns along the east coast. Copper, gold, silver, zinc, manganese, and uranium add to Sweden's resources. Plenty of water power feeds a well-developed hydroelectric system.

Old crafts, too, earn respect from connoisseurs and money from tourists. Indoor beauty means a lot in a dark, cold country, so for centuries the Swedish peasant has decorated his home and his church with his own paintings and woodwork. Using modern machines to supplement rather than supplant their folk art, Swedes turn out designs in furniture, china, glass, and metalware that are world famous. Rural families, nestled in clean, gaily-painted farmhouses amid the white birches and green, fertile meadows of the southern regions, carve wooden toys or design bright textiles during the long winter evenings. They add to the private enterprise which accounts for 95 percent of Sweden's production. Four percent

Winter's Night Is Cold and Dark Outside, But This Swedish Kitchen Is Lit by Gay Colors, Warmed by the Joy of Craftsmanship

NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL

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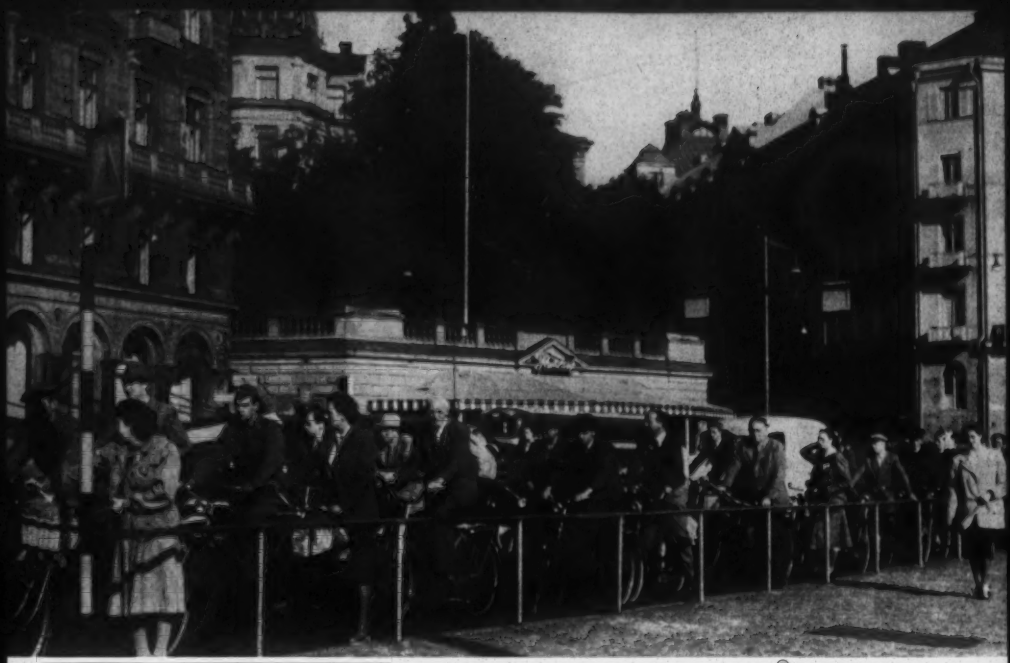

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Bicycle Bells Drown out Auto Horns as Stockholm's Breadwinners Hurry to Work. Sixty Percent of Swedes Are Rural, But 750,000 Congregate in the Capital and Largest City

Middle Road Leads Sweden to Prosperity

Not since the time of Napoleon has Sweden engaged in warfare—and then it was forced into it. During world wars I and II, the Scandinavian kingdom walked the narrow line of neutrality. Today it seeks the middle way between Russia and the West.

"The Middle Way" describes Sweden's character as well as its politics. When the nation gave up warfare, after a brief fling at it in the 1700's as one of Europe's great military powers, the middle class emerged as Sweden's dominating element. All-powerful kings gave way to parliament as the nucleus of government. As industry developed, labor took over much of the country's political power from the nobility. In 1920, Sweden formed the first labor cabinet in Europe.

Today Sweden remains essentially middle class although it retains its monarchy. As in Great Britain, the real head of the government is the prime minister. Despite the tradition of neutrality, Sweden's position between East and West forces it to maintain 660,000 men under arms, the world's fifth-biggest air force, mostly comprised of Swedish-built jet fighters, and a navy of 118 vessels.

Sweden still lacks self-sufficiency. The country depends on western neighbors for cotton, wool, and other raw materials. Though they have not joined NATO, Swedes look to friends for help in case of aggression. Their peaceful role has been, and is now, an uneasy one to play.

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Kentucky, Missouri Claim Daniel Boone's Bones

Like fringe on buckskin, Daniel Boone belongs to Kentucky. But early America's most famous frontiersman was born and raised in Pennsylvania, lived in North Carolina, ranged the forests from Florida to Detroit, and once roamed as far west as present-day Nebraska. In the twilight of his restless career he lived in Missouri from the late 1790's until his death in 1820—longer than he ever stayed put in Kentucky.

Schoolboys still marvel at Boone's hunting and tracking exploits—losing panting redskins by swinging across streams on grapevines, finding his way unerringly through hundreds of miles of woods so dense that sunlight had to fight to reach the ground. Asked if he ever became lost, the buckskin buccaneer said, "No . . . but I was bewildered once for three days."

If Daniel's ghost came back today, he might be bewildered again—at the ruckus over his bones. Kentucky and Missouri both claim them, and and this is how it came about.

In 1790, after leading settlers over the Wilderness Road, fighting off Indians, and helping pave the way for imminent statehood, Boone left Kentucky in a huff upon losing all his lands in title disputes. After a few years in what is now West Virginia he sought "more elbow room" by moving out of the United States entirely and taking up a huge grant on the Missouri River 38 miles west of St. Louis.

The Spanish, who administered the Louisiana Territory at the time, made Boone a magistrate. The old frontiersman, holding court under a judgment elm which is still standing, dispensed the only civilized law between St. Louis and Pacific coastal settlements. Still a pioneer and trail blazer at heart, he was happiest hunting and trapping with his dog.

The United States acquired the Louisiana Territory and Missouri was just one year away from statehood when Boone died of a fever in the sturdy stone home (still standing) of his son Nathan. Missouri buried him in a near-by plot where his wife Rebecca had previously been laid to rest. In 1845, Kentucky, wishing to honor its famous citizen, moved the remains to Frankfort.

Or did they? Missourians now claim the Kentuckians opened the wrong grave and that Daniel's bones lie undisturbed near the marker (right) on a small knoll overlooking the Missouri River.

RALPH GRAY, NATIONAL GEOGRAPHIC STAFF

results from cooperatives, one percent from government-owned companies.

Orderly, literate Swedes can boast some enviable features of daily living. In almost every Swedish home, for example, along with the Bible, stands a small volume which contains the complete codification of the nation's law. It serves as a handy reference—if a Swede runs into a legal problem, he tends to thrash it out for himself with his book. One effect of this codification is that lawyers are proportionately fewer in Sweden than in many other countries.

In summer the native craving for the out-of-doors brings city workers to outdoor cafes and crowded beaches. Stockholm, "Venice of the North," straddles 13 flowered islands, linked by a network of bridges. The old core of the city looks out on summer seas flecked with white sails of almost every craft that will float. On the city's outskirts are the clean, functional housing projects that have enhanced the nation's reputation for having Europe's highest standard of living. From such dwellings, Swedish workers may go to factories equally modern and attractive. And in the evenings they take for granted a six- to ten-course smörgåsbord to replenish the inner man.

This pleasant way of life is not entirely the result of Sweden's neutrality. The nation's nonparticipation in World War II brought crippling shortages to its people. Both German and British navies blockaded Sweden's coast. Lack of fuel caused inventive Swedes to develop a substitute made from by-products of pulpwood. But other shortages so hampered employment that even today competition for jobs is far too stiff. A telephone repair man, sometimes, must complete three years of engineering training before he can hope to qualify.

Better explanation for the standard of living is the Swedish character —thoughtful, moderate, deliberate. To such people as the young cyclist below, the middle way seems a broad, safe highway to security.

NATIONAL GEOGRAPHIC PHOTOGRAPHER VOLKMAR WENTZEL

References—Sweden is shown on the National Geographic Society's map of Northern Europe. Write the Society, Washington 6, D. C., for a map price list. *National Geographic Magazine*, May, 1952, "Thumbs Up Round the North Sea's Rim"; Nov., 1950, "Baltic Cruise of the *Caribbee*"; June, 1940, "Rural Sweden Through American Eyes"; Sept., 1939, "Life's Flavor on a Swedish Farm"; GEOGRAPHIC SCHOOL BULLETINS, Oct. 12, 1953, "Sweden's Capital Celebrates 700th Birthday"; March 2, 1953, "English Now Required in Swedish Schools." *School and library discount price for Magazine issues a year old or less, 50¢; through 1946, 65¢. Write for prices of earlier issues.*

Back Issues of the GEOGRAPHIC SCHOOL BULLETINS

Did you know that back issues of current and recent numbers of the *Geographic School Bulletins* are available at 10¢ per copy? Orders of 100 or more of a given issue are filled at the quantity rate of 7½¢ per copy when available.

himself in a raging family argument.

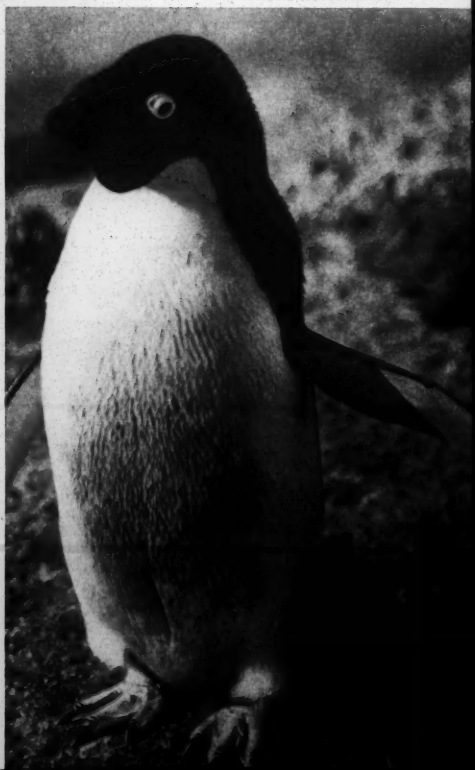
Any Adélie worth his salt enjoys a nice noisy dispute among friends, but when a belligerent outlander like the red-beaked rockhopper (below, left) starts throwing his weight around, it's time to think things over.

In this way, clownish Adélie penguins might spend a typical day in the South Polar regions. Or, greeting a party of explorers, they are apt to line up in long queues, solemnly waiting a turn to gaze at the humans.

Whether they be Adélies, emperors, rockhoppers, or dignified, sagacious macaronis with bushy golden eyebrows, penguins have ludicrously humanlike habits in common. They are strictly monogamous, the male "baby sitting" by dandling the egg on his insteps.

Penguin lore awaits National Geographic Magazine readers of the issues of January, 1955; September, 1952; February, 1932.

H. W. ROHLAND (BELOW LEFT)



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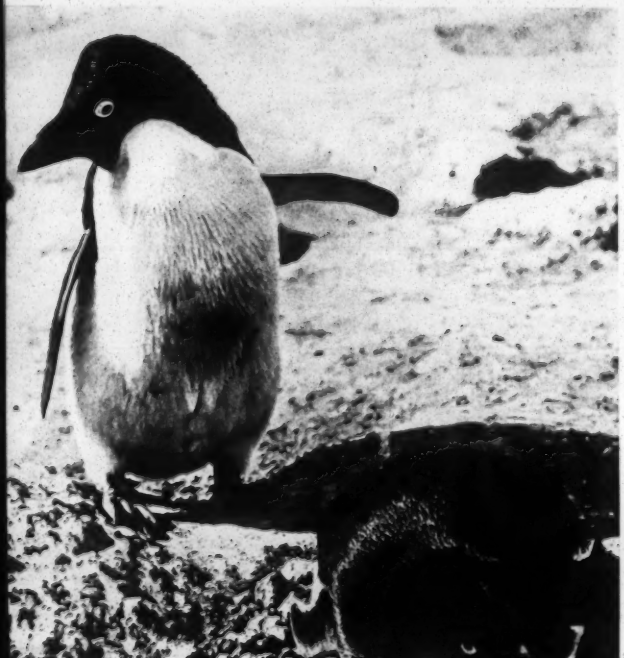
Busy Day in Penguin Land



"Heigh-ho, another day," says this Adélie penguin, peering from a heavy drift of Antarctic snow. Caught by a storm, penguins allow themselves to be buried, knowing their warm breath will always keep an air-hole open to the surface. Then, when the blizzard is over, they cock white-rimmed eyes at the bleak out-of-doors to see what life has in store.

With a flick of flipper-like wings, the Adélie starts his social rounds. Seeing another penguin, he courteously offers assistance. After all, this might be a lady—even penguins can't always be sure. He gets only a sour look in return, and finds himself in a raging family argument.

In the ionosphere, the next sixty-mile layer, the unchecked ultraviolet rays can roast a man. Cosmic rays, ordinarily filtered out of earth's sunlight by the blanket of atmosphere, can puncture the space ship like bullets. Meteors, traveling at incredible speed, can pulverize it. The sun's heat can turn it into an oven on one side, while the black shade makes it super-refrigerated on the other.

The Air Force is battling many of these problems with its new "sealed cabin" which, on the ground, simulates conditions inside a space ship. The Douglas *Skyrocket,* a supersonic flying laboratory, has screamed up to an altitude of 15 miles without effect on its pilot. Scientists feel that ultraviolet rays can be filtered out of the sunlight by special materials which would cover the portholes of a space ship. An outer layer to the hull, and self-sealing inner walls may prove the answer to meteorite projectiles. Colored panels, to reflect or absorb the radiant heat from the sun, might control temperature within the cabin. For years balloons bearing instruments have probed the region of cosmic rays to gather information about them. In 1934 and 1935 the National Geographic Society and the Army Air Corps sponsored ascents into the stratosphere which set an altitude record of 13.71 miles for manned balloons that lasted 18 years. Other experiments by the National Geographic Society were made in conjunction with the Franklin Institute of Philadelphia in recent years, to discover atomic secrets that cosmic rays can disclose.

If man can survive in outer space, what's stopping him? Chief barrier

Returned to Earth by Parachute after a Rocket Flight in Space, a Groggy Rhesus Monkey, Swaddled for Safety, Is Retrieved by a Smiling Technician

U. S. AIR FORCE, OFFICIAL

Animals Pioneer the Way to the Stars

U. S. AIR FORCE

The picture at the right is not upside down. The white mice are in no danger of hurting themselves. They are floating freely inside the nose of a rocket, perhaps 70 miles up.

A few moments before this picture was taken, scientists settled the mice comfortably inside a pressurized capsule within the rocket. All openings were sealed, the ground crew ran from the firing platform to take shelter in concrete bunkers. Then a mighty roar shook the floor of the desert and the great cigar-shaped structure rose, slowly at first, then accelerating to become a howling meteor dwindling into the sky's vastness. Its white trail of condensed vapor, wreathing aimlessly far behind, was all the eye could see.

To the mice, this was probably a trying experience, but no more than that, according to the fixed movie camera that recorded their movements. At first, the pressure of the tremendous acceleration pinned them, cowering, on the floor of their cabin. Then, as the rocket arched over to begin its drop, the mice became weightless. Just as you lift from the seat of a car when it goes over a thank-you-ma'am, so the mice hung in space, kicking futilely at nothing, scratching at the walls and ceiling of their container.

A parachute lowered these two rodent space flyers safely to earth in their compartment. The scientists hurried to test them. For their flight was no cruel prank, but a sober experiment in a subject that even in this atomic age has a spine-tingling sound—space travel.

The mice emerged physically fit (if a little bewildered) from their ordeal. So did the monkeys who have swollen the ranks of animal space veterans. Their reactions are pointing out uncharted problems of life in a space ship, paving the way for man's first journey through the black, inhospitable emptiness of the star-spotted universe.

To leave their protective shell of air and enter the void outside it, men must carry their own oxygen and be sealed off from the vacuum of space which would literally make their blood boil. They must withstand the force of acceleration equal to the weight of nine men pressing them down. They must learn to keep their wits about them when, like the white mice, they achieve weightlessness and float free. They will feel as though constantly falling in a broken elevator and they must be able to eat, sleep, think, and move in spite of it.

Laboratory animals which have probed the threshold of space offer reassurance that men, too, can remain efficient and healthy in spite of the hardships of this new frontier. But many other problems face the space pioneer. When he reaches the stratosphere, the region between eight and sixty miles above sea level, he meets the danger of ozone which absorbs the sun's ultraviolet rays and is poisonous in concentrated doses.

Canton Island: a Minute in Blue Infinity

Landing on Canton Island seems like a terrible mistake. The heavy transpacific airliner glides toward the reaching whitecaps. Salt spray spatters the windows. Suicidally, the landing gear unfolds and chunks into place—with nothing in sight to land on but the endless ocean.

Then a white ribbon of coral unfolds just in time to take the wheels. The plane rumbles down the strip and brakes to a stop on a tiny atoll 100 to 700 yards wide and 30 miles around a turquoise lagoon. From the air, Canton Island looks for all the world like a scooped-out pork chop barely rising 20 coral feet above sea level.

Only screams of sea birds and shouts from men on occasional whaling vessels broke the island's wave-washed sleep until June, 1937. Then it burst into the news as host to the National Geographic Society and other United States and British eclipse expeditions. Scientists roaming the coral reefs saw the island's importance as a mid-ocean air base.

The United States and the United Kingdom established joint control. Now roaring engines of airliners and the banter of 280 human voices has broken the coral stillness forever. Americans, Dutch, Japanese, Portuguese, Englishmen, Hawaiians, Australians, Chinese, Koreans, and natives from Gilbert, Ellice, and the Fiji Islands have joined to make the international community life there happy and carefree.

Thirty-two children learn about the world beyond their blue-tipped horizon in an English-speaking school. The island hospital is run by a husband-and-wife team which hangs a baby blanket—pink or blue—from the flagstaff whenever a baby is born to this coral world.

These Islanders Building a Canoe Are Not Native to Canton—Uninhabited Before 1937

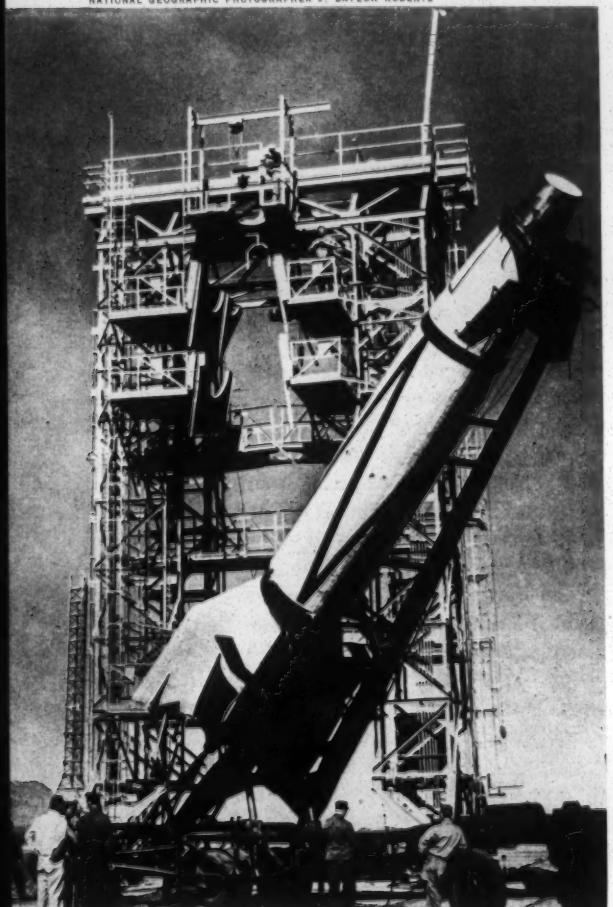
HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF

is cost. In order to smash through the resistance of the atmosphere, a rocket ship would need to carry vast amounts of fuel. It would have to be as tall, perhaps, as a 24-story building, made of rare and expensive metals, incorporating fantastic equipment and safety devices. Just one such ship would cost hundreds of millions of dollars—and it would still lack the range to penetrate far beyond the doorway to outer space.

Such a ship would need a wayside station in space—a refueling depot or a stopover where the space crew could change ships for a further journey. This is one reason for building a space platform, or satellite, which thoughtful scientists are seriously considering. Suspended in space by its own great speed some 500 miles in the air, the satellite would circle the earth perhaps every two hours. It would afford, say some defense experts, a constant view of activities on earth—like a remote, all-seeing eye—and would provide warning of aggression by one nation against another. Astronomers claim it would increase five or ten times the range of telescopes which now have to probe the dense atmosphere. It would make present-day astronomy seem like peering upward through a tank of murky water.

Earthmen may build a satellite within the next few decades. Or luck may make it unnecessary. Only recently a Chicago astronomer, John P. Bagby, sighted a cluster of small floating bodies circling earth no more than 450 miles away. His report is being checked. If, among these baby moons, hitherto overlooked by far-scanning telescopes, there is an asteroid big enough to serve the purpose of a space platform, the satellite problem might be solved. Science could then establish its stepping-stone to the moon—and the planets beyond.

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS



References—*National Geographic Magazine*, Jan., 1953, "Trailing Cosmic Rays in Canada's North"; Feb., 1952, "Our Universe Unfolds New Wonders"; Sept., 1950, "Mapping the Unknown Universe"; Nov., 1947, "Unlocking Secrets of the Northern Lights"; July, 1939, "News of the Universe" and "Solar System's Eternal Show" (10 paintings).

Fourteen Tons of V-2 Will Rocket Nearly 100 Miles from New Mexico Base—Straight up

HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF

Canton's Children of Many Races Play the Year Round on Sun-Drenched Beaches

Pets abound. One dog is the envy of the canine world, having perfected the art of catching fish in the lagoon which is like a flowery, bright-colored coral creation. Fantastic fish fill its watery depths, while terns, frigate and man-of-war birds watch at the water's edge for a likely victim.

Life goes on in Northside and Southside, the island's two towns across the lagoon, as anywhere in the world. Most islanders work for the airlines, or the two British and American post offices, but some are fishermen, serving Honolulu's tables, 1,909 miles away, with fresh mullet flown in in seven and a half hours.

Nearly everyone tries gardening in the sun-baked ground. Poinsettias, mimosa, spider lilies, and even morning glories grow, coaxed by sea water with the salt removed. Today a thousand coconut trees ornament the landscape.

In case you forget where you are, a signpost reminds you: New York 7,049 miles, London 10,501 miles, Johannesburg 16,190 miles.

References—Canton Island may be located on the Society's map of the Pacific Ocean on which it appears in a large-scale inset. *National Geographic Magazine*, Jan., 1955, "Air Age Brings Life to Canton Island"; June, 1938, "Crusoes of Canton Island"; Sept., 1937, "Eclipse Adventures on a Desert Isle."